

Claims

What is claimed is:

5 1. A method of processing a signal wherein at least a portion of the signal includes one or more closed captions representing audio content associated with a program whose visual content is being viewed by a user, the method comprising the steps of:

obtaining, from a source, the signal including the one or more closed captions in a portable processing device;

10 processing the signal in the portable processing device so as to generate a display signal representative of the one or more closed captions in the obtained signal; and

providing the display signal from the portable processing device to a portable display, operatively coupled to the device, for presentation to the user so that the user may view the visual content of the program and view the one or more closed captions in accordance with the portable display.

15 2. The method of claim 1, wherein the visual content of the program is presented on a content display system and the portable processing device and the portable display are independent of the content display system.

3. The method of claim 2, wherein the content display system is one of a television set, a computer display, and a movie theater screen.

20 4. The method of claim 1, wherein the closed captions presented to the user on the portable display are substantially synchronized with the visual content of the program being viewed by the user.

5. The method of claim 1, wherein the obtaining step comprises receiving the signal including the one or more closed captions from a transcription service.

6. The method of claim 5, wherein the transcription service is configured to prestore transcriptions corresponding to audio content associated with programs, generate a signal including one or more closed captions from a requested transcription, and transmit the signal to the portable processing device.

5 7. The method of claim 5, wherein the transcription service is configured to generate a transcription associated with a program in real-time upon request, generate a signal including one or more closed captions from the real-time transcription, and transmit the signal to the portable processing device.

10 8. The method of claim 7, wherein the real-time transcription is generated via at least one of a human stenographer, an automatic speech recognition system, and real-time alignment of a prestored transcription.

 9. The method of claim 5, wherein the transcription service is configured to provide the closed captions in one or more different languages.

15 10. The method of claim 1, wherein the obtaining step comprises receiving the signal including the one or more closed captions from a closed caption translation service.

 11. The method of claim 10, wherein the obtained signal is a broadcast television signal.

20 12. The method of claim 11, wherein the visual content of the program is presented on a television set and the broadcast television signal is obtained from the closed caption translation service via redirection from the television set.

13. The method of claim 1, wherein the portable display is a head mounted display system.

14. The method of claim 1, wherein the portable device and the source are in communication via one of a wired link and a wireless link.

5 15. Apparatus for processing a signal wherein at least a portion of the signal includes one or more closed captions representing audio content associated with a program whose visual content is being viewed by a user, the apparatus comprising:

 a portable processing device including at least one processor operative to: (i)
 obtain, from a source, the signal including the one or more closed captions; and (ii)
10 process the signal so as to generate a display signal representative of the one or more closed captions in the obtained signal; and

 a portable display operatively coupled to the portable processing device and
 operative to receive and present the display signal to the user so that the user may view
 the visual content of the program and view the one or more closed captions in accordance
15 with the portable display.

16. The apparatus of claim 15, wherein the visual content of the program is presented on a content display system and the portable processing device and the portable display are independent of the content display system.

20 17. The apparatus of claim 16, wherein the content display system is one of a television set, a computer display, and a movie theater screen.

18. The apparatus of claim 15, wherein the closed captions presented to the user on the portable display are substantially synchronized with the visual content of the program being viewed by the user.

19. The apparatus of claim 15, wherein the obtaining operation comprises receiving the signal including the one or more closed captions from a transcription service.

5 20. The apparatus of claim 19, wherein the transcription service is configured to prestore transcriptions corresponding to audio content associated with programs, generate a signal including one or more closed captions from a requested transcription, and transmit the signal to the portable device.

10 21. The apparatus of claim 19, wherein the transcription service is configured to generate a transcription associated with a program in real-time upon request, generate a signal including one or more closed captions from the real-time transcription, and transmit the signal to the portable device.

22. The apparatus of claim 21, wherein the real-time transcription is generated via at least one of a human stenographer, an automatic speech recognition system, and real-time alignment of a prestored transcription.

15 23. The apparatus of claim 19, wherein the transcription service is configured to provide the closed captions in one or more different languages.

24. The apparatus of claim 15, wherein the obtaining operation comprises receiving the signal including the one or more closed captions from a closed caption translation service.

20 25. The apparatus of claim 24, wherein the obtained signal is a broadcast television signal.

26. The apparatus of claim 25, wherein the visual content of the program is presented on a television set and the broadcast television signal is obtained from the closed caption translation service via redirection from the television set.

5 27. The apparatus of claim 15, wherein the portable display is a head mounted display system.

28. The apparatus of claim 15, wherein the portable processing device and the source are in communication via one of a wired link and a wireless link.

10 29. The apparatus of claim 28, wherein the portable processing device further comprises a communication module for providing an interface for the communication link.

30. The apparatus of claim 15, wherein the portable processing device further comprises an input controller operatively coupled to the processor for allowing the user to enter one or more instructions to the processing device.

15 31. The apparatus of claim 15, wherein the portable processing device further comprises a microphone operatively coupled to the processor for allowing the user to enter one or more voice-based instructions to the processing device.

32. A closed captioning system, comprising:
a closed caption receiver configured to be carried by a user including:
a portable processing device including at least one processor operative to:
20 (i) obtain, from a closed caption service system, a signal including one or more closed captions representing audio content associated with a program whose

visual content is being viewed by the user; and (ii) process the signal so as to generate a display signal representative of the one or more closed captions in the obtained signal; and

5 a portable display operatively coupled to the portable processing device and operative to receive and present the display signal to the user so that the user may view the visual content of the program and view the one or more closed captions in accordance with the portable display; and

10 a closed caption service system, operatively coupled to the closed caption receiver, including at least one processor operative to: (i) generate the signal including the one or more closed captions; and (ii) provide the signal to the closed caption receiver.

33. The system of claim 32, wherein the visual content of the program is presented on a content display system and the closed caption receiver is independent of the content display system.

15 34. The system of claim 33, wherein the content display system is one of a television set, a computer display, and a movie theater screen.

35. The system of claim 32, wherein the closed captions presented to the user on the portable display are substantially synchronized, at the closed caption service system, with the visual content of the program being viewed by the user.

20 36. The system of claim 32, wherein the closed caption service system comprises a transcription service.

37. The system of claim 36, wherein the transcription service is configured to prestore transcriptions corresponding to audio content associated with programs, generate

a signal including one or more closed captions from a requested transcription, and transmit the signal to the closed caption receiver.

38. The system of claim 36, wherein the transcription service is configured to generate a transcription associated with a program in real-time upon request, generate a
5 signal including one or more closed captions from the real-time transcription, and transmit the signal to the closed caption receiver.

39. The system of claim 38, wherein the real-time transcription is generated via at least one of a human stenographer, an automatic speech recognition system, and real-time alignment of a prestored transcription.

40. The system of claim 36, wherein the transcription service is configured to
10 provide the closed captions in one or more different languages.

41. The system of claim 32, wherein the closed caption service system comprises a translation service.

42. The system of claim 41, wherein the obtained signal by the closed caption
15 receiver is a broadcast television signal.

43. The system of claim 42, wherein the visual content of the program is presented on a television set and the broadcast television signal is obtained from the translation service by the closed caption receiver via redirection from the television set.

44. The system of claim 32, wherein the portable display is a head mounted
20 display system.

45. The system of claim 32, wherein the closed caption receiver and the closed caption service system are in communication via one of a wired link and a wireless link.

5 46. The system of claim 45, wherein the portable processing device further comprises a communication module for providing an interface for the communication link.

47. The system of claim 32, wherein the closed caption receiver further comprises an input controller operatively coupled to the processor for allowing the user to enter one or more instructions to the processing device.

10 48. The system of claim 32, wherein the closed caption receiver further comprises a microphone operatively coupled to the processor for allowing the user to enter one or more voice-based instructions to the processing device.